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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/717,975	11/20/2003	James F. Cameron	51200	7999

7590 07/10/2006

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EXAMINER
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WALKE, AMANDA C

ART UNIT	PAPER NUMBER
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1752

DATE MAILED: 07/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/717,975	CAMERON ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Amanda C. Walke	1752	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 February 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,22 and 60-71 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 22, and 60-71 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/22/2006 has been entered.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 22, and 60-71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Motoyama (EP 408334) in view of Knors et al (5,800,963) and Thackeray et al (5,851,738). Motoyama et al disclose a resist comprising of a mixture of either poly 4,4,6,6-tetramethyl-4,6-disila-heptyne or poly 4,4,7,7-tetramethyl-4,7-disila-2-octyne as a host polymer and an additional reagent having at least a radical reactive on the double bond of the host polymer, and a patterning process using this resist, particularly as a top patterning resist in a bilayer system (abstract). According to example 1, the novolac underlayer (which the reference teaches may be any known underlayer), is spin coated and baked onto the substrate then the resist layer containing the silicon-containing component is applied and patterned. While the reference teaches that any

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suitable polymers may be employed for the underlayer of the bi-layer resist system, and provides examples, the reference is silent with respect to the additional components of this underlayer.

Knors et al has been discussed above. a composition and methods for the use and manufacture thereof are provided for a polymeric dye. The composition comprises one or more aminoaromatic chromophores in conjunction with polymers having an anhydride group or the reaction products thereof. The composition is particularly useful as an underlaying antireflective coating with microlithographic photoresists for the absorbtion of near or deep ultraviolet radiation. The antireflective film of the invention has improved dry etching properties.

Given the teachings of the references, it would have been obvious to one of ordinary skill in the art to prepare the material of Motoyama choosing to employ the polymers of Knors et al to increase the dry etching properties of the layer, with expectation of achieving a material having high resolution and sensitivity.

The Motoyama et al reference further fails to specifiy additional, conventional components of the underlayer such as a crosslinker.

Thackeray et al disclosing an anti-reflective underlayer for use in a bi-layer resist system having similar materials to the underlayers of the primary (and secondary) references. The reference teaches that conventional components of these layers include crosslinkers. Known crosslinkers include benzoguanamine and melamine.

Given the teachings of the references, it would have been obvious to one of ordinary skill in the art to prepare the material of Motoyama in view of Knors et al choosing to employ the conventional crosslinkers of Thackeray et al, with expectation of achieving a material having high resolution and sensitivity.

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***Response to Arguments***

4. Applicant's arguments filed 2/22/2006 have been fully considered but they are not persuasive. Applicant has argued that the material of Motoyama is a negative resist. While one example of the reference employs a negative resist, the reference broadly teaches a resist which made be made to be either positive or negative. Therefore the examiner has maintained the rejection over Motoyama et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amanda C. Walke whose telephone number is 571-272-1337. The examiner can normally be reached on M-R 5:30-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Amanda C Walke  
Primary Examiner  
Art Unit 1752

ACW  
April 28, 2006